



Training Proposal for:
TTM Printed Circuits Group, Inc.
Agreement Number: ET12-0232

Panel Meeting of: **December 16, 2011**

ETP Regional Office: **San Francisco Bay Area**

Analyst: T. Teles

PROJECT PROFILE

Contract
Type: Priority/Retrainee

Industry
Sector(s): Manufacturing

Counties
Served: Orange, San Diego, Santa Clara

Repeat
Contractor: ☐ Yes ☒ No

Union(s): ☐ Yes ☒ No

Priority
Industry: ☒ Yes ☐ No

No. of Employees in CA: 817

No. of Employees Worldwide: 2,898

Turnover Rate %	Manager/ Supervisor %
6%	10%

FUNDING DETAIL

Program Costs	Substantial Contribution	Total ETP Funding
\$499,950	\$0	\$499,950

In-Kind Contribution
\$1,900,000

TRAINING PLAN TABLE

Job No.	Job Description (by Contract Type)	Type of Training	Estimated No. of Trainees	Range of Hours		Average Cost per Trainee	Post-Retention Wage
				Class / Lab	CBT		
1	Priority/Retrainee	Business Skills, Computer Skills, Continuous Improvement, Hazardous Materials Management Skills, Manufacturing Skills, Advanced Technology, PL-Mfg	505	24 - 200	0	\$990	\$14.81
				Weighted Avg: 55			

Minimum Wage by County: \$15.37 for Orange County and Santa Clara counties, \$14.81 per hour for San Diego County.

Health Benefits: ☒ Yes ☐ No This is employer share of cost for healthcare premiums – medical, dental, vision.

Used to meet the Post-Retention Wage?: ☒ Yes ☐ No

Up to \$2.92 per hour may be used to meet the Post-Retention Wage.

Wage Range by Occupation	
Occupation Title	Wage Range
Office Staff	
Support Staff	
Manufacturing Staff	
Operations Support Staff	
Manager/Supervisor	
Operators	
Business Development Staff	
Sales Staff	
Research and Development Staff	
Finance Staff	

INTRODUCTION

In this proposal, TTM Printed Circuits Group, Inc. (TTM) seeks funding for retraining as outlined below:

TTM was formed in September 1999 and is a manufacturer of printed circuit boards (PCB) and backplane assemblies. The company serves a diversified customer base in various markets

throughout the world, including manufacturers of networking and communications infrastructure products, personal computers, touch screen tablets and mobile media devices (cellular phones and smart phones). The company also has customers in the commercial aerospace and defense, and industrial and medical industries. The company's customers include both original equipment manufacturers (OEMs) and electronic manufacturing services (EMS) providers.

TTM has 817 employees in California and proposes to train 505 employees at three California sites in Santa Clara, San Diego, and Santa Ana. The Santa Ana location in Orange County is in a designated High Unemployment Area.

TTM is eligible for ETP funding priority industry. The company meets out-of-state requirements as an industrially-classified manufacturer. (Title 22, California Code of Regulations, Section 4416(i)(2).)

PROJECT DETAILS

TTM representatives report that PCB's are very sophisticated, customized components in the electronics supply chain. TTM's three locations each have different capabilities and market specializations. The Santa Ana location is focused New Product Introduction. The Santa Clara location is focused on highly specialized products in the defense and commercial aerospace markets used in ruggedized applications such as weapons and guidance systems, cockpit controls, and aircraft traffic control systems. The San Diego location is focused on Radio frequency and antenna transmission products that are also used for ruggedized and mission-critical applications. Note: Ruggedized means hardening of building products for upgraded durability in harsh environmental conditions.

TTM conducted an organization-wide training assessment to better understand the general development needs by occupational group, division, and/or job. As a result, TTM's proposed training program will focus on improving productivity; leadership; product innovation, quality and product development; customer attraction, service and retention; and environmental and employee protection.

The company is also constructing a waste treatment yard to reduce chemical costs, improve safety, and ensure compliance with all federal, state, and local requirements. In Santa Clara, a new chemical tracking database will be launched in 2012 which will increase the ability to accurately track chemical usage and disposal. The San Diego location will implement the Fast Trak System, an enterprise resource planning system, which will decrease the time spent on reports and improve inventory control.

Lastly, TTM is constantly upgrading equipment in order to satisfy existing customer's product specifications as well as to attract new customers. All equipment used at TTM is customizable and programmable such as Computer Numerical Control Programmable Logic Controller; high resolution photolithography equipment; automated optical inspection equipment; and electrical test equipment. ETP funding will not duplicate the training included in the purchase agreement of new equipment.

To achieve its goals, TTM will provide training in the following:

Business Skills training will allow TTM's staff in Operations, Research and Development, Finance, Sales, and Managers and Supervisors to become proactive with customers, improve communication skills, customer relationship skills, and support the company as it continues to grow and compete in a competitive marketplace.

Computer Skills training will be provided to operations, finance, sales staff to effectively use the company's automated systems to provide efficient and effective customer service, to improve internal processes and procedures and improve the ability to communicate and share information internally and with customers.

Continuous Improvement will be provided companywide to focus on quality and process improvement to reduce costs, eliminate waste, identify and resolve problems, and provide better quality products that will attract new and continuing customers.

Hazardous Materials training will be provided to operations support staff involved in the new chemical waste treatment yard and any employee that handles chemicals or waste water. The training will ensure that employees follow all protocols related to chemical handling and waste water treatment to ensure employee and environmental safety. Although some training is regulatory, the training included in this project is above the required mandated hours.

Management Skills training will be provided only to Managers and Supervisors and will focus on leadership and coaching skills which will enable them to lead their teams effectively.

Manufacturing Skills will focus on the company's day-to-day operations. Operators, manufacturing staff, and select operations support staff will be trained in best manufacturing practices and technical skills and will be cross-trained to do several jobs. Training in production processes will upgrade worker's production efficiency, increase productivity and meet customers' expectations.

Manufacturing Productive Lab training will be provided to manufacturing employees and other staff that support the manufacturing floor, monitor quality, and/or support the logistical management of printed circuit board products and materials. It is essential that this training is conducted on the job to ensure that the employees can understand the proper use and/or application of highly technical equipment and processes. Trainees will be trained in very sophisticated equipment that cannot be duplicated in a classroom setting. The number of productive lab hours could be up to 200 and will be determined by individual skill level and the number of different equipment in which they will be trained. All training will be overseen by a Supervisor/Manager level employee.

Advanced Technology (AT) training will enable new product development staff (research and development) and operations management staff with the skills necessary for interpreting, designing, and manufacturing new technologies. AT courses in Emerging Technology in PCB Design and Signal Integrity (Quality Control Methodology) will be taught by a combination of external vendors and internal senior engineers who are compensated at wages above the \$26 per hour. The trainer-to-trainee ratio is 1:10 for AT, to allow in-depth coverage and personal attention from the instructor.

Commitment to Training

TTM's training efforts are primarily focused on job skills certification, quality management system updates, mandatory OSHA, EPA, DOT training, compliance training, new employee orientation, and job skills training as needed. The annual budget for California is \$695,580.

The company represents that ETP funds will not displace the existing financial commitment to training. TTM anticipates that the opportunity for enhanced training made possible by ETP funds will encourage an ongoing financial commitment in this area.

TTM represents that safety training is, and will continue to be, provided in accordance with all pertinent requirements under state and federal law.

High Unemployment Area

Some of the trainees in Job Number 1 work in a High Unemployment Area (HUA). This is a region with unemployment exceeding the state average by 15%. (Title 22, CCR, Section 4429(b).) The determination of HUA status is based on unemployment data from the Labor Market Information Division of the Employment Development Department. The company's location in Orange County qualifies for HUA status under these standards.

However, TTM is not asking for a wage or retention modification.

Productive Lab

The Panel recently adopted regulations to authorize reimbursement for training delivered in a Productive Laboratory (PL) setting. PL trainees may produce goods for profit as part of the training, in the courses identified under the Curriculum and with no more than 10 trainees per instructor. The instructor must be dedicated to training delivery during all hours of training, and special attendance rosters will be used to assist in monitoring.

RECOMMENDATION

For the reasons set forth above, staff recommends approval of this proposal.

DEVELOPMENT SERVICES

TTM retained Sara Cagle in Carlsbad to assist with development of this proposal for a flat fee of \$3,975.

ADMINISTRATIVE SERVICES

TTM also retained Sara Cagle to perform administrative services in connection with this proposal for a fee not to exceed 13% of payment earned.

TRAINING VENDORS

To Be Determined

Exhibit B: Menu Curriculum**Class/Lab Hours**

24 – 200

Trainees may receive any of the following:

BUSINESS SKILLS

- ✚ Accounting Rules
- ✚ Business Presentation Skills
- ✚ Coaching
- ✚ Communication Skills
- ✚ Conflict Management/Resolution
- ✚ Credit & Collections Training
- ✚ Critical Thinking Skills
- ✚ Customer Relationship Management
- ✚ Diverse Perspectives
- ✚ Finance for Non-Finance
- ✚ High Performance Work Teams
- ✚ Influencing Skills
- ✚ Interviewing Skills
- ✚ Negotiation Skills
- ✚ PCB 101 (Basics of Printed Circuit Boards)
- ✚ Planning for Results
- ✚ Problem Solving Skills
- ✚ Revenue Recognition
- ✚ Strategic Planning
- ✚ Technical Presentation Skills
- ✚ Train the Trainer

COMPUTER SKILLS

- ✚ Intermediate and Advanced Microsoft Office
- ✚ New Chemical Training Database
- ✚ Fast Trak System

CONTINUOUS IMPROVEMENT

- ✚ Basic Electricity for the Non-Electrician
- ✚ Electric Motors and Motor Control Circuits
- ✚ Electrical Ladder Drawings, Schematics & Diagrams
- ✚ Electrical PM & Best Practices
- ✚ Electrical Troubleshooting & Preventive Maintenance
- ✚ Export Control Compliance
- ✚ IPC 600/610 Re-Cert
- ✚ ISO Training
- ✚ ITAR (International Traffic in Arms Regulations)
- ✚ NADCAP Certification (National Aerospace & Defense Contractors Accreditation Program)
- ✚ NADCAP Re-Certification
- ✚ Quality Management System Procedure Changes
- ✚ Six Sigma & Statistical Quality & Process Control (SPC)
- ✚ Job Skills Certification

- ✚ New Equipment Maintenance and Repair
- ✚ PLC I - PLCs for Non-Programmers (Programmable Logic Controller)
- ✚ PLC Programming and Applications
- ✚ PLC Workshop - From Introduction to Application

HAZARDOUS MATERIALS

- ✚ Chem Dump, Re-make & Adjustment
- ✚ DOT Hazardous Material Transportation Training
- ✚ Hazardous Material & New Chemical Handling
- ✚ Hazardous Waste Operations and Emergency Response Certification
- ✚ Hazardous Waste Operations and Emergency Response Re-Certification
- ✚ Radiation Safety Training
- ✚ Stormwater-Pollution Prevention

MANAGEMENT SKILLS (management trainees only)

- ✚ Leader vs Manager
- ✚ Managing Career Development
- ✚ Managing Discipline
- ✚ Managing Employee Illness & Injury
- ✚ Performance Management
- ✚ Reward & Recognition

MANUFACTURING SKILLS

- ✚ Industrial Knowledge (How to Read Blueprints/How to Build PCBs)
- ✚ Job Skills Certification (Processes/Procedures)

ADVANCED TECHNOLOGY (limited ratio 1:10)

- ✚ Emerging Technology in PCB Design
- ✚ Signal Integrity (Quality Control Methodology)

Productive

Lab Hours

24-200

MANUFACTURING SKILLS (limited ratio 1:10)

- ✚ Fast Trak System
- ✚ Inter-Departmental Cross-Training
- ✚ Intra-Departmental Cross-Training
- ✚ New Systems and Waste Water Treatment Technology
- ✚ Shipping & Receiving New Products (how to properly handle new products/materials)
- ✚ Job Skills Certification (Processes/Procedures)
- ✚ Chem Dump, Re-Make and New Chemical Handling
- ✚ New Equipment Maintenance and Repair
- ✚ Orbotech Inkjet Legend Printer

Note: Reimbursement for retraining is capped at 200 total training hours per trainee, regardless of the method of delivery.